PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
TERESA A. LAVOIE
FISH & RICHARDSON P.C.
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

	Date of mailing *(day/month/year)* 02 MAR 2010
Applicant's or agent's file reference 253240026WO1	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. PCT/US 10/20253	International filing date *(day/month/year)* 06 January 2010 (06.01.2010)
Applicant CUREMARK LLC	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

   Filing of amendments and statement under Article 19:
   The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

   When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

   Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 338 8270

   For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

   ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

   ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

   Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90*bis*.1 and 90*bis*.3, respectively, before the completion of the technical preparations for international publication.

   The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

   Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

   In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

   See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 253240026WO1	**FOR FURTHER ACTION**	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/US 10/20253	International filing date *(day/month/year)* 06 January 2010 (06.01.2010)	(Earliest) Priority Date *(day/month/year)* 06 January 2009 (06.01.2009)
Applicant CUREMARK LLC		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 2 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

   a. With regard to the **language**, the international search was carried out on the basis of:

   ☒ the international application in the language in which it was filed.

   ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

   b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

   c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II).

3. ☐ **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title**,

   ☒ the text is approved as submitted by the applicant.

   ☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

   ☒ the text is approved as submitted by the applicant.

   ☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

   a. the figure of the **drawings** to be published with the abstract is Figure No. _____

   ☐ as suggested by the applicant.

   ☐ as selected by this Authority, because the applicant failed to suggest a figure.

   ☐ as selected by this Authority, because this figure better characterizes the invention.

   b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 10/20253

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - C12N 11/18 (2010.01)
USPC - 435/175
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
USPC 435/175

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC 435/424/93.42, 424/165.1, 424/237.1, 424/243.1, 424/464; 435/69.2, 435/183; 514/170, 514/171, 514/560 (see search terms below)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PubWEST(USPT,PGPB,EPAB,JPAB); Google: @PD<20090106; S. aureus; Staphylococcus aureus; staph$; infect$; enzyme; digestive; digestion; protease; amylase; cellulose; sucrase; maltase; papain; lipase; pancreatic; enzyme; pig; chymotrypsin; trypsin; oral; topical$; transderm$; wound$; device; coat$; transmucosal; phenol coefficient

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 3,940,478 A (Kurtz) 24 February 1976 (24.02.1976) Abstract; col 1, ln 5-13; col 1, ln 15-18; col 1, ln 56 to col 2, ln 5; col 2, ln 17-50; col 3, ln 1-38; col 4, ln 18-60	1-3, 5, 7, 12, 14, 16-21, 26, 28, 30 ---------- 4, 6, 8-11, 13, 15
X --- Y	US 2004/0209790 A1 (Sava et al.) 21 October 2004 (21.10.2004) Abstract; para [0004], [0007], [0019], [0037], [0061], [0101], [0112], [0145]	22-25, 29, 31 ---------- 27
Y	US 3,357,894 A (Uriel et al.) 12 December 1967 (12.12.1967) col 1, ln 1-25; col 2, ln 45-51	4, 6, 8
Y	US 2008/0166334 A1 (Fallon) 10 July 2008 (10.07.2008) Abstract; para [0017]-[0018], [0021], [0025]	9-11
Y	US 6,309,669 B1 (Setterstrom et al.) 30 October 2001 (30.10.2001) col 7, ln 39-55; col 8, ln 6-11; col 8, ln 44-57; col 10, ln 3-7; col 10, ln 62-65; col 12, ln 46; col 48, ln 29-50; col 60, ln 58-65; col 73, ln 32-33	13, 15
Y	US 3,002,883 A (Butt et al.) 3 October 1961 (03.10.1961) Abstract; col 1, ln 1-20; col 5, ln 15-26	27

☐ Further documents are listed in the continuation of Box C. ☐

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
23 February 2010 (23.02.2010)	02 MAR 2010
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To: TERESA A. LAVOIE
FISH & RICHARDSON P.C.
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	02 MAR 2010

Applicant's or agent's file reference	FOR FURTHER ACTION
253240026WO1	See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US 10/20253	06 January 2010 (06.01.2010)	06 January 2009 (06.01.2009)

International Patent Classification (IPC) or both national classification and IPC
IPC(8) - C12N 11/18 (2010.01)
USPC - 435/175

Applicant CUREMARK LLC

1. This opinion contains indications relating to the following items:

- [X] Box No. I Basis of the opinion
- [ ] Box No. II Priority
- [ ] Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- [ ] Box No. IV Lack of unity of invention
- [X] Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- [ ] Box No. VI Certain documents cited
- [ ] Box No. VII Certain defects in the international application
- [X] Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US	Date of completion of this opinion	Authorized officer:
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	23 February 2010 (23.02.2010)	Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 10/20253

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

   ☒ the international application in the language in which it was filed.

   ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished:

   a. (means)

      ☐ on paper

      ☐ in electronic form

   b. (time)

      ☐ in the international application as filed

      ☐ together with the international application in electronic form

      ☐ subsequently to this Authority for the purposes of search

4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 10/20253

Box No. V **Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	4, 6, 8-11, 13, 15, 27	YES
	Claims	1-3, 5, 7, 12, 14, 16-26, 28-31	NO
Inventive step (IS)	Claims	NONE	YES
	Claims	1-31	NO
Industrial applicability (IA)	Claims	1-31	YES
	Claims	NONE	NO

2. Citations and explanations:

Claims 1-3, 5, 7, 12, 14, 16-21, 26, 28 and 30 lack novelty under PCT Article 33(2) as being anticipated by US 3,940,478 A to Kurtz.

As to claim 1, Kurtz discloses a method for the treatment or prevention (Abstract; col 1, ln 5-13) of S. aureus (col 4, ln 30-60) infection in a mammal (col 3, ln 20-23, disclosing treating man), comprising administering to the mammal a therapeutically effective amount of a pharmaceutical composition (col 2, ln 18-50, disclosing applying a proteolytic enzyme to a wound to prevent an infection) comprising one or more digestive enzymes (col 3, ln 1-19, disclosing digestive proteases).

As to claim 2, Kurtz further discloses where the one or more digestive enzymes comprise proteases (col 3, ln 1-19).

As to claim 3, Kurtz further discloses where the one or more digestive enzymes comprise one or more pancreatic enzymes (col 4, ln 18-27, disclosing the pancreatic enzyme tripsin).

As to claim 5, Kurtz further discloses where the proteases (col 3, ln 1-19) comprise chymotrypsin (col 3, ln 14) and trypsin (col 3, ln 9-19, disclosing tripsin and a combination of enzymes for use in the treatment).

As to claim 7, Kurtz further discloses where the mammal is a human (col 3, ln 20-23).

As to claim 12, Kurtz further discloses where the pharmaceutical composition is a dosage formulation (col 3, ln 1-8) consisting of liquids (col 4, ln 41-50, disclosing topical application of a solution containing the enzymes).

As to claim 14, Kurtz further discloses where the pharmaceutical composition is formulated for topical administration (col 4, ln 41-50, disclosing topical application of a solution containing the enzymes).

As to claim 16, Kurtz further discloses where the pharmaceutical composition is formulated for application to wounds (Abstract; col 2, ln 17 -20).

As to claim 17, Kurtz discloses a method of treating (Abstract; col 1, ln 5-13) a mammal (col 3, ln 20-23, disclosing treating man) exhibiting one or more symptoms (col 1, ln 56 to col 2, ln 5, disclosing where an open wound has a proteinaceous coagulum) of an S. aureus infection (col 4, ln 30-60) comprising administering to the mammal a therapeutically effective amount of a composition (col 2, ln 18-50, disclosing applying a proteolytic enzyme to a wound to prevent an infection) comprising one or more digestive enzymes (col 3, ln 1-19, disclosing digestive proteases).

As to claim 18, Kurtz further discloses administering a beta-lactam antibiotic to the mammal or bird (col 3, ln 20-38).

As to claim 19, Kurtz discloses a method for promoting wound healing in an individual with a wound (Abstract; col 1, ln 5-13) comprising administering a pharmaceutical composition (col 2, ln 18-50, disclosing applying a proteolytic enzyme to a wound to prevent an infection) comprising one or more digestive enzymes (col 3, ln 1-19, disclosing digestive proteases) to the individual (col 2, ln 18-50).

As to claim 20, Kurtz further discloses where the pharmaceutical composition is applied to the wound of the individual (col 2, ln 18-50).

As to claim 21, Kurtz further discloses where the wound is a surgical wound (col 1, ln 15-18; col 4, ln 30-33).

As to claim 26, Kurtz discloses a method for reducing (Abstract; col 1, ln 5-13) the amount of S. aureus present on a wound (col 4, ln 30 to col 5, ln 21) of a mammal (col 3, ln 20-23, disclosing treating man) comprising applying to the wound a composition (col 2, ln 18-50, disclosing applying a proteolytic enzyme to a wound to prevent an infection) comprising one or more digestive enzymes (col 3, ln 1-19, disclosing digestive proteases).

As to claim 28, Kurtz discloses an antibiotic (Abstract; col 1, ln 5-13) comprising one or more digestive enzymes (col 3, ln 1-19, disclosing digestive proteases), wherein the antibiotic is bacteriocidal for S. aureus (col 4, ln 30-60).

----------continued in Supplemental Box----------

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 10/20253

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
For purposes of the search and opinion, claim 11 is considered to be dependent on claim 10, and not itself.

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 10/20253

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:
Box No. V 2. Citations and explanations:

As to claim 30, Kurtz discloses an antiseptic (col 4, ln 41-50, disclosing topical application of a solution containing the enzymes) comprising one or more digestive enzymes (col 3, ln 1-19, disclosing digestive proteases), wherein the antiseptic is bacteriocidal for S. aureus (col 4, ln 30-60).

Claims 22-25, 29 and 31 lack novelty under PCT Article 33(2) as being anticipated by US 2004/0209790 A1 to Sava et al. (hereinafter 'Sava').

As to claim 22, Sava discloses a method for sanitizing or disinfecting a surface (Abstract; para [0004], [0019]) to reduce the amount of S. aureus thereon (para [0112], [0145]), comprising applying to the surface a composition (para [0007], [0019]) comprising one or more digestive enzymes (para [0007]).

As to claim 23, Sava further discloses where the surface is a nonliving or inanimate surface (Abstract; para [0004], disclosing the surface of a medical instrument).

As to claim 24, Sava further discloses where the surface is on a medical device (Abstract; para [0004]).

As to claim 25, Sava further discloses where the medical device is a probe (para [0004], disclosing an endoscope).

As to claim 29, Sava discloses a detergent (para [0061], [0101]) comprising one or more digestive enzymes (para [0007]), wherein the detergent is bacteriocidal (para [0037]) for S. aureus (para [0112], [0145]).

As to claim 31, Sava discloses a disinfectant (para [0004], [0019]) comprising one or more digestive enzymes (para [0007]), wherein the disinfectant is bacteriocidal (para [0037]) for S. aureus (para [0112], [0145]).

Claims 4, 6 and 8 lack an inventive step under PCT Article 33(3) as being obvious over Kurtz in view of US 3,357,894 A to Uriel et al. (hereinafter 'Uriel').

As to claim 4, Kurtz does not specifically disclose where the one or more of the digestive enzymes comprise pig enzymes. Uriel discloses a digestive enzyme that comprises pig enzymes (col 1, ln 1-25). It would have been obvious to a skilled artisan to combine the Kurtz and Uriel disclosures by using pig enzymes as the enzymes taught by Kurtz. A skilled artisan would have been motivated to combine the references by the Uriel disclosure, teaching that trypsin may be extracted from pig pancreas (col 2, ln 45-51).

As to claim 6, Kurtz does not specifically disclose where the one or more digestive enzymes are, independently, derived from an animal source, a microbial source, a plant source, a fungal source, or are synthetically prepared. Uriel discloses a digestive enzyme that is derived from an animal source (col 1, ln 1-25, disclosing pig enzymes). It would have been obvious to a skilled artisan to combine the Kurtz and Uriel disclosures by using enzymes derived from an animal source as the enzymes taught by Kurtz. A skilled artisan would have been motivated to combine the references by the Uriel disclosure, teaching that trypsin may be extracted from pig pancreas (col 2, ln 45-51).

As to claim 8, Uriel further discloses where the animal source is a pig pancreas (col 1, ln 1-25; col 2, ln 45-51, disclosing enzymes derived from pig pancreas).

Claims 9-11 lack an inventive step under PCT Article 33(3) as being obvious over Kurtz in view of US 2008/0166334 A1 to Fallon.

As to claim 9, Kurtz further discloses where the pharmaceutical composition comprises a mixture of proteases comprising chymotrypsin and trypsin (col 3, ln 9-19). Kurtz does not specifically disclose where the composition additionally comprises at least one amylase and at least one lipase. Fallon discloses a pharmaceutical composition (Abstract; para [0017]-[0018]) where the composition comprises a mixture of proteases (para [0021]) comprising chymotrypsin (para [0021]) and trypsin (para [0021]); at least one amylase (para [0021]); and at least one lipase (para [0021]). It would have been obvious to a skilled artisan to combine the Kurtz and Fallon disclosures by using the mixture taught by Fallon with the method taught by Kurtz. A skilled artisan would have been motivated to combine the references because Kurtz teaches the use of a similar amount of protease to treat an infection (col 3, ln 1-8, disclosing 20,000-30,000 NF units per wound) as Fallon teaches for the treatment of cystic fibrosis (para [0025], disclosing the use of 10,000-50,000 USP units). Furthermore, a skilled artisan would have understood that cystic fibrosis patients are susceptible to infections by S. aureus, and would have found therapeutic benefit of administration of said composition.

----------continued in next Supplemental Box----------

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 10/20253

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:
Prior Supplemental Box:

As to claim 10, Kurtz further discloses where the pharmaceutical composition comprises at least one protease. Kurtz does not specifically disclose where the composition comprises at least one lipase, and wherein the ratio of total proteases to total lipases (in USP units) ranges from about 1:1 to about 20:1. Fallon discloses a pharmaceutical composition (Abstract; para [0017]-[0018]) where the composition comprises a mixture of proteases (para [0021]) and at least one lipase (para [0021]), where the ratio of total proteases to total lipases (in USP units) ranges from about 1:1 to about 20:1 (para [0025], disclosing ranges where the ratio of protease to lipase is 1:1). It would have been obvious to a skilled artisan to combine the Kurtz and Fallon disclosures by using the mixture taught by Fallon with the method taught by Kurtz. A skilled artisan would have been motivated to combine the references because Kurtz teaches the use of a similar amount of protease to treat an infection (col 3, ln 1-8, disclosing 20,000-30,000 NF units per wound) as Fallon teaches for the treatment of cystic fibrosis (para [0025], disclosing the use of 10,000-50,000 USP units). Furthermore, a skilled artisan would have understood that cystic fibrosis patients are susceptible to infections by S. Aureus, and would have found therapeutic benefit by adminstration of said compostion.

As to claim 11, Fallon further discloses where the ratio of proteases to lipases ranges from about 4:1 to about 10:1 (para [0025], disclosing where 40,000 USP is in the protease range and where 4,000 USP is in the lipase range, giving a ratio of 10:1).

Claims 13 and 15 lack an inventive step under PCT Article 33(3) as being obvious over Kurtz in view of US 6,309,669 B1 to Setterstrom et al. (hereinafter 'Setterstrom').

As to claim 13, Kurtz does not specifically disclose where the pharmaceutical composition is formulated for oral administration. Setterstrom discloses a method for the treatment or prevention (col 7, ln 39-55) of S. aureus (col 48, ln 29-50) infection in a mammal (col 60, ln 58-65) where a pharmaceutical composition (col 8, ln 6-11) containing digestive enzymes (col 10, ln 62-65; col 12, ln 46, disclosing trypsin as an active agent) is formulated for oral administration (col 73, ln 32-33). It would have been obvious to a skilled artisan to combine the Kurtz and Setterstrom disclosures by formulating the composition taught by Kurtz for oral administration. A skilled artisan would have been motivated to combine the references by the Kurtz disclosure, teaching that the enzymes potentiate systemically delivered antibiotics (col 8, ln 44-57).

As to claim 15, Kurtz does not specifically disclose where the pharmaceutical composition is formulated for transmucosal administration. Setterstrom discloses a method for the treatment or prevention (col 7, ln 39-55) of S. aureus (col 48, ln 29-50) infection in a mammal (col 60, ln 58-65) where a pharmaceutical composition (col 8, ln 6-11) containing digestive enzymes (col 10, ln 62-65; col 12, ln 46, disclosing trypsin as an active agent) is formulated for transmucosal administration (col 10, ln 3-7). It would have been obvious to a skilled artisan to combine the Kurtz and Setterstrom disclosures by formulating the composition taught by Kurtz for transmucosal administration. A skilled artisan would have been motivated to combine the references by the Kurtz disclosure, teaching that the enzymes potentiate systemically delivered antibiotics (col 8, ln 44-57).

Claim 27 lacks an inventive step under PCT Article 33(3) as being obvious over Sava in view of US 3,002,883 A to Butt et al. (hereinafter 'Butt').

As to claim 27, Sava discloses a disinfectant (para [0004], [0019]) comprising one or more digestive enzymes (para [0007]). Sava does not specifically disclose where the disinfectant has a phenol coefficient of > 1 to about 20 for S. aureus or E. coli. Butt discloses a disinfectant where a disinfectant (Abstract; col 1, ln 1-20) has a phenol coefficient of > 1 to about 20 for S. aureus (col 5, ln 15-26). It would have been obvious to a skilled artisan to combine the Sava and Butt disclosures by giving the disinfectant taught by Sava a phenol coefficient of > 1 to about 20 for S. aureus. A skilled artisan would have been motivated to use such a coefficient to ensure that the disinfectant properly disinfects for a broad spectrum of antimicrobial activity, as taught by Butt (col 1, ln 1-20).

Claims 1-31 have industrial applicability as defined by PCT Article 33(4) because the subject matter can be made or used in industry.